

AMENDMENTS TO THE ABSTRACT:

Please replace the Abstract on page 42 of the Disclosure as follows:

ABSTRACT OF THE DISCLOSURE

An objective of the present invention is to provide a transformant altered so as to produce a secondary metabolite in which a benzene ring of the secondary product is modified at the para-position with a functional group containing a nitrogen atom. A transformant according to the present invention is a transformant of an organism producing a secondary metabolite having a benzene ring skeleton without substitution at the para-position with a functional group containing a nitrogen atom, said transformant being transformed by introducing ~~a gene~~ genes involved in a biosynthetic pathway from chorismic acid to p-aminophenylpyruvic acid, including a gene encoding an amino acid sequence (SEQ ID NO: 2) having 4-amino-4-deoxychorismic acid synthase activity, a gene encoding an amino acid sequence (SEQ ID NO: 4) having 4-amino-4-deoxychorismic acid mutase activity and a gene encoding an amino acid sequence (SEQ ID NO: 6) having 4-amino-4-deoxyphenic acid dehydrogenase activity, so as to produce a secondary metabolite having a benzene ring skeleton substituted at the para-position with a functional group containing a nitrogen atom. Another objective of the present invention is to provide a novel gene involved in the biosynthetic pathway from chorismic acid to p-aminophenylpyruvic acid. A novel gene according to the present invention comprises genes encoding the amino acid sequences of SEQ ID NOs: 2, 4 and 6 or modified sequences thereof.

Please note that a clean version of the revised Abstract is attached at the end of this response.

ABSTRACT OF THE DISCLOSURE

An objective of the present invention is to provide a transformant altered so as to produce a secondary metabolite in which a benzene ring of the secondary product is modified at the para-position with a functional group containing a nitrogen atom. A transformant according to the present invention is a transformant of an organism producing a secondary metabolite having a benzene ring skeleton without substitution at the para-position with a functional group containing a nitrogen atom, said transformant being transformed by introducing genes involved in a biosynthetic pathway from chorismic acid to p-aminophenylpyruvic acid, including a gene encoding an amino acid sequence (SEQ ID NO: 2) having 4-amino-4-deoxychorismic acid synthase activity, a gene encoding an amino acid sequence (SEQ ID NO: 4) having 4-amino-4-deoxychorismic acid mutase activity and a gene encoding an amino acid sequence (SEQ ID NO: 6) having 4-amino-4-deoxyprephenic acid dehydrogenase activity, so as to produce a secondary metabolite having a benzene ring skeleton substituted at the para-position with a functional group containing a nitrogen atom. Another objective of the present invention is to provide a novel gene involved in the biosynthetic pathway from chorismic acid to p-aminophenylpyruvic acid. A novel gene according to the present invention comprises genes encoding the amino acid sequences of SEQ ID NOs: 2, 4 and 6 or modified sequences thereof.